

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056

In the matter of the petition of

Duncan Aviation

for an exemption from § 25.813 (c)(1) and
(c)(2) of Title 14, Code of Federal Regulations

Regulatory Docket No. FAA-2001-10273
(formally Docket No. 30024)

DENIAL OF EXEMPTION

By letter dated April 3, 2000, Mr. Daniel Buzz, Senior Systems Engineer, Duncan Aviation, Lincoln Airport, P.O. Box 81887, Lincoln Nebraska 68501, petitioned for an exemption from the requirements of §§ 25.813(c)(1) and (c)(2) of Title 14, Code of Federal Regulations (14 CFR). This exemption, if granted, would permit installation of adjustable seats that could encroach into the projected opening of the Type III exit on the Astra SPX airplane.

The petitioner requests additional relief from the following regulations:

Section 25.813(c)(1) requires that there be access from the nearest aisle to each emergency exit.

Section 25.813(c)(2) requires that, for each Type III exit, the projected opening of the exit provided may not be obstructed by seats or other protrusions for a distance inboard equal to the width of a passenger seat. On airplanes with 19 or fewer passengers, an exception is made to permit minor obstructions provided the effectiveness of the exit is not reduced.

Related sections of the Federal Aviation Regulations (FAR):

Section 25.807 requires that the emergency exit complement for an airplane with 9 passengers or less consist of an exit on each side of the fuselage, meeting the requirements of a Type IV or larger emergency exit.

Section 25.809(b) requires that each emergency exit be openable from the inside and the outside.

The petitioner's supportive information is as follows:

“Relief is being sought from the above stated requirement to allow a seating configuration that places a seat aft of each emergency exit. Since the seat is capable of tracking, rotating, and reclining, the seat can be positioned such that the exit is ‘rendered unopenable;’ however, this seat position is not the approved taxi, takeoff and landing position for which the seat location is placarded. Specifically, Duncan Aviation seeks relief from FAR 25.813(c), such that a tracking, swiveling and recline capable seat can be placed aft of the emergency exit, even though the seat is capable of being positioned such that the exit cannot be opened. Seats which were installed in serial number 111 were required to be pinned in place, such that the tracking, swiveling and recline capabilities were restricted.

“Contained herein will be justification for allowing such a configuration. This justification will include additional requirements in the flight manual to ensure that the seats that are located in the vicinity of the exits are appropriately positioned prior to taxi, takeoff and landing.

“Aircraft Description

“This relief is sought for Duncan Aviation STC interior installation, ST00808WI, as it relates to the Israel Aircraft Industries Astra SPX business jet. The Astra SPX is a mid size jet with a top speed of .875 mach, and an NBAA-IFR range of 2,950 nautical miles. The SPX accommodates from six to nine passengers in a variety of floor plans. SPX aircraft are in service with corporate customers in Argentina, Brazil, Canada, Germany, the United Kingdom and the United States. In addition to its corporate use, the aircraft is in service with the U.S. Air National Guard as a special missions aircraft, with the military designation C-38A. A typical 8-place interior configuration consists of four forward facing passenger seats, two aft facing passenger seats, a RH side-facing seat, and a RH belted toilet. Seats located immediately aft of the two over-wing emergency exits are the seat locations for which relief is being sought by this exemption request.

”Justification

"Item 1: The STC interior configurations began at serial number 0111. At that time, the aircraft interior was enhanced with primarily cosmetic and ergonomic improvements. The seats were changed to provide more comfort by incorporating an "S" back design and moveable armrests. Tracking, swiveling and recline capability was not changed from the previously certified seat configurations that were installed up through serial number 0110; therefore, the safety afforded passengers was not changed by the new seats or the STC interior configurations.

"Item 2: The aircraft employs placards to provide information with respect to a variety of emergency equipment locations and usage, including instructions to perform actions with respect to seat and restraint system operation, smoking and cigarette disposal restrictions, as well as several other passenger instructions. Visual signs (exit marking and locators) and placards are commonly used to elicit appropriate passenger behavior in all types of

aircraft. Business jets have relied on informational placards for decades, to provide instructions to passengers as stated above. The use of placarding on SPX aircraft up to serial number 0110 is considered acceptable, however the same form of placarding on serial number 0111 is now being considered unacceptable, simply because an improved seat design has now been installed in the same location as before the STC improvements. Based upon this common practice, the SPX aircraft is now being placed at a competitive disadvantage in the marketplace, since competing aircraft under similar Type Certifications do not have to meet this requirement.

"Item 3: Allowing the continued use of placards to instruct passengers as to the proper position for the seat during taxi, takeoff and landing, does not adversely affect safety. Serial number 0111 with new seats would not be any less safe than serial 0110 with the old seat design. The ability to egress the aircraft is not altered by this change in seats.

"Item 4: It is in the public interest to provide air transportation, as it has been shown that air travel is a much safer form of transportation than automotive transportation. Failing to allow companies an equal advantage in the marketplace disrupts a company's ability to sell its product, thus potentially driving an established manufacturer from business. Since this aircraft was developed at a time when the regulations were interpreted differently, it creates an unfair condition if the aircraft is to be held to higher standards than its original design is capable of. The fact that more than one hundred of these aircraft have been sold attests to the fact that the public is being served by having this product in production; therefore, it is in the public interest to not discriminate against this aircraft, due to its vintage. It would be a travesty if this aircraft were to be taken from production due to loss of sales as a result of an exit access issue that was not an issue when the aircraft design was originally conceived. There is also no history of this aircraft being a hazard to the public, as a result of the seats located in the vicinity of the exits.

"Item 5: A flight manual supplement will be included to provide instruction to the crew, to verify that the seats in the vicinity of the exits are in the appropriate taxi, takeoff and landing position. This crew instruction will be included as a checklist item, thus creating a higher level of passenger safety than what is afforded when flight attendants are present in an aircraft.

"Conclusion

"For the above stated reasons, Duncan Aviation believes that an Exemption should be granted for the IAI [Israel Aircraft Industries] Astra SPX aircraft, such that the public can continue to be comfortably and safely served by this aircraft. The modification to this aircraft by STC ST00808WI does not alter the safety of the aircraft from the previous 110 units that have been delivered to customers. Improved crew instructions provide a higher level of safety, which is also in the public interest, such that aircraft delivered after serial number 110 are actually safer than the earlier aircraft."

A summary of the petition was published in the Federal Register on May 22, 2000 (65 FR 32147). No comments were received.

The FAA's analysis/summary is as follows:

The petitioner is requesting relief from the requirement that there be access to each Type III exit from the nearest aisle and that the projected opening of a Type III exit be free of obstructions. In addition, the petitioner requests the position of seats for takeoff and landing be controlled by placard. Seats in certain positions can prevent opening of the exit.

As noted above, the regulations currently permit minor obstructions into a Type III exit opening for airplanes with 19 or fewer passengers, provided the effectiveness of the exit is not reduced. The regulations do not offer relief from the requirement that exits must be openable from the inside and the outside. The FAA issued guidance to reiterate this point in 1991 (Advisory Circular 25-17, and memorandums dated 5/29/91 and 10/15/91).

While not explicitly stated by the petitioner, it appears that the existing interior arrangements of Astra SPX airplanes (as many as 110) permit seats to be in positions that will prevent opening of the exit, and that the reason that the current airplanes are being addressed is because of a change in the seats. The petition notes that the design change to the seats does not affect their ability to translate, swivel or otherwise adjust position. Rather, the design change was intended to improve occupant comfort by changing the seatback and armrests.

There are several factors that must be considered in addressing this petition. First, the petitioner notes that the first 110 airplanes were not assessed in the same manner used to assess the 111th airplane, resulting in non-standard application of the requirements. Second, the change being made does not affect the ability of the seats to move. Third, the petitioner also notes that there have been no safety problems on any of the earlier airplanes. Finally, there is the question of whether crew procedures and placards are sufficient to control seat location, when the potential consequence is an exit that is not openable.

With respect to the first issue, the FAA agrees that the application of the requirement appears to be inconsistent. However, the requirement itself is consistent. In fact, § 25.813 actually refers to "seatbacks in any position," when describing the requirement for an unobstructed exit opening. In addition, FAA policy on this specific issue is provided in memorandums dated May 29, 1991 and October 15, 1991. These memorandums state that crew procedures and placard are not adequate for ensuring that seats will be relocated to the appropriate locations and remain in those locations during taxi, take-off and landing, to ensure that the exits can be opened in case of an emergency. It also should be noted that the FAA is under no obligation to approve arrangements that do not comply.

The argument that the design change does not affect the ability of the seat to move is not sufficient justification for continuing to certify non-compliant designs. The fact that the

seats were being modified provides an opportunity to make the modifications necessary to show compliance. In addition, that the necessary modifications *were not* made originally does not compel the FAA to continue to accept non-compliant configurations.

The fact that the service history does not show any problems with the arrangement requested is positive but may indicate an absence of service history, rather than a favorable service history. Relevant service data would include data that demonstrates that the exits are openable during actual emergency evacuations.

To reiterate, the FAA holds the position that crew procedures and placards are not sufficient to control seat location when the potential consequence is an exit that is not openable in an emergency. As mentioned previously, the FAA issued guidance on this issue in 1991 (memorandums dated 5/29/91 and 10/15/91). Crew procedures are not adequate because passenger seats are susceptible to the passengers' actions after the crew has completed their preparatory duties. Placards for instructing passengers to locate seats so exits are openable are similarly not adequate. As mentioned by the petitioner, the FAA has approved the use of other types of placards, but those placards have been found to comply with the level of safety of the aircraft required by the regulations. It is our position that the proposed configuration would significantly lower the overall level of safety of the aircraft by creating the potential consequence of exits not being openable and evacuation of the entire airplane being inhibited or prevented during an emergency evacuation due to passengers not following placarded instructions.

In consideration of the foregoing, I find that a grant of exemption is not in the public interest, and will significantly affect the overall level of safety provided by the regulations. Therefore, pursuant to the authority contained in 49 U.S.C. 40113 and 44701, delegated to me by the Administrator, the petition of Duncan Aviation for an exemption from the exit access requirements of 14 CFR § 25.813(c) is denied.

Issued in Renton, Washington, on March 8, 2002.

/s/ Ali Bahrami
Ali Bahrami
Acting Manager
Transport Airplane Directorate
Aircraft Certification Service